

REMARKS/ARGUMENTS

The Applicants hereby respectfully request reconsideration of the present application in view of the foregoing amendments and the following remarks/arguments. Claims 1-20 were originally filed in the present application. By a first prior Amendment, claims 1 and 11 were amended, and claims 21 and 22 were added. By a second prior Amendment, claims 1, 11 and 22 are amended. By the present Amendment, claims 1, 2, 5, 7, 9, 11, 12, 15, 17 and 19 have been canceled, and claims 3, 4, 6, 8, 10, 13, 14, 16, 18 and 20-22 have been amended. In addition, new claims 23-36 have been added. Accordingly, claims 1-22, as herein amended, are now pending in the present application.

I. REJECTIONS UNDER 37 C.F.R. §102

The Office Action has rejected claims 1, 4, 6-7, 9-11, 14, 16-17 and 19-22 under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,646,545 to Trimberger *et al.* In response, the Applicants have canceled original independent claims 1 and 11, and have added new independent claims 23 and 30. In addition, while several of the previous dependent claims have been canceled, the remaining dependent claims have been amended to depend from these new independent claims, in addition to other amendments.

Looking specifically at independent claims 23 and 30, each of the configuration data modules loaded by the loader is stored in each of the data registers included in the shift register of the logic computing device. In contrast, Trimberger fails to teach a shift register. On the other hand, Trimberger discloses the memory slices (Column 22, Line 6-8). In addition, Butts teaches that in reconfigurable systems (with an example being the LCA chip), the reconfigurable features are controlled by shifting in configuration data (Column 7, Line 67 - Column 8, Line 2).

However, Trimberger discloses that configuration select (CRS) signals determine which

read select signals to use from blocks 330, wherein each block includes 8 memory cells MC0-MC7 (Column 7, Lines 55-57). Because of this express teaching, there is no motivation or reason for Trimberger to shift the configuration data among the memory cells MC0-MC7. If the memory cells MC0-MC7 are constructed as shift registers, a logic computing device must include both a selector (select signal generator) and shift registers. Such construction increases the cost and complexity for creating new memory cells. Therefore, one of ordinary skill in the art would not have used Butts' specific teachings with Trimberger's system, and made the memory "shift registers." Accordingly, Trimberger and Butts have not taught all of the claimed features recited in claims 23 and 30, namely, the shift register expressly recited in claims 23 and 30.

In addition, in independent claims 23 and 30, at least part of the parameters in at least one flip flop(s) are stored in the parameter register when the configuration data modules stored in the shift register are shifted. In contrast, as discussed in detail above, Trimberger fails to teach a shift register. Therefore, the feature of the parameter register in claim 23 and 30 is different from that of the micro register disclosed by Trimberger (Column 2, Lines 22-23 and Column 7, Lines 23-26). Further, Butts fails to teach a parameter register which stores at least part of such parameters, when the shifting in configuration data is executed. As a result, Trimberger and Butts also do not teach the feature about the parameter register recited in independent claims 23 and 30.

For at least the above reasons, Trimberger does not disclose all of the elements of new independent claims 23 and 30, nor the claims dependent thereon. Thus, Trimberger does not anticipate these claims or their dependent claims. Accordingly, the Applicants respectfully request that this rejection be withdrawn.

II. REJECTIONS UNDER 35 U.S.C §103

The Office Action has rejected dependent claims 2 and 12 under 35 U.S.C §103(a) as allegedly obvious and thus unpatentable over Trimberger in view of U.S. Patent 5,036,473 to Butts *et al.* These dependent claims have been canceled. Therefore, this rejection has been rendered moot.

In addition, the Office Action has rejected dependent claims 3 and 13 under 35 U.S.C §103(a) as allegedly obvious and thus unpatentable over Trimberger in view of Butts, and further in view of an article drafted by Liu *et al.* In dependent claims 3 and 13, the configuration data modules in the shift register are shifted among the data registers circularly. And only one configuration data module stored in one data register is referred to by the logic block. In contrast, Trimberger and Butts have not taught that shift registers are arranged in a circular fashion. On the other hand, Liu teaches that the configurable logic is laid out as a circular shift register (Figure 1). However, Liu discloses in the first page that the same FPGA is temporally shared by all of the logic in different stages (k micro-cycles). Because of this structure, the same FPGA must refer to all of the logic in different stages. Thus, Liu fails to teach a logic block which refers only to one configuration data module stored in one data register of shift register. The structure of Liu increases the connection lines between the shift registers and the same FPGA. As a result, the combination of Trimberger, Butts and Liu have not taught all of the features in dependent claims 3 and 13.

Next, the Office Action has rejected dependent claims 5 and 15 under 35 U.S.C §103(a) as allegedly obvious and thus unpatentable over Trimberger in view of the Liu article. These dependent claims have been canceled. Therefore, this rejection has been rendered moot.

Also, the Office Action has rejected dependent claims 8 and 18 under 35 U.S.C

§103(a) as allegedly obvious and thus unpatentable over Trimberger in view of the article drafted by Patterson *et al.* In response, the Applicants respectfully assert that these dependent claims are not obvious over the cited combination of references. As discussed above, Trimberger does not teach or suggest all of the elements recited in independent claims 23 and 30. In addition, Patterson does nothing to cure the deficiencies of Trimberger discussed above, and is only relied upon for teaching specific limitation set forth in these rejected dependent claims. However, even assuming these elements are taught by Patterson, the cited combination still does not teach all of the limitations of claims 23 and 30, as discussed in detail above. As a result, the combination of Trimberger with Patterson does not teach or suggest all of the elements of dependent claims 8 and 18.

With regard to newly added independent claims 25 and 32, the configuration data modules are loaded from the data storage to the logic computing device by the loader in response to the load commands received from the logic computing device. In contrast, Trimberger fails to teach that load commands from logic computing device (for example, a CLB) are received by a loader. Therefore, Trimberger does not teach or suggest the loader and the logic computing device recited in independent claims 25 and 32. Therefore, Trimberger also fails to teach all of the elements of the claims dependent on claims 25 and 32. For example, in dependent claims 4 and 14, selection of the one data memory by the selector is changed with another data memory among the data memories circularly. In contrast, Trimberger fails to teach that configuration data is selected circularly. On the other hand, Liu teaches the configurable logic is laid out in a circular fashion (Figure 1). However, the combinations of a selector with memory cells MC0-MC7 in Trimberger are quite different from any shift registers in Liu. Therefore, one of ordinary skill in the art

would not have made use of Liu's invention with Trimberger's system. As a result, Trimberger and Liu do not teach the feature about the selector recited in dependent claims 4 and 14.

As a result, the combinations of Trimberger with Butts, Liu, and Patterson, or various combinations thereof, do not teach or suggest all of the elements of independent claims 23, 25, 30 and 32. Since all of the remaining dependent claims depend from one of these independent claims, these dependent claims are also not obvious in view of the various cited combinations of references set forth in the rejections. Accordingly, the Applicants respectfully request that the Examiner also withdraw the §103(a) rejections with respect to the pending claims.

III. CONCLUSION

The Applicants respectfully submit that the pending claims are in condition for allowance, and request a Notice of Allowability for the pending claims. The Examiner is invited to contact the undersigned Attorney of Record if such would expedite the prosecution of the present Application. The three-month response deadline expires on January 9, 2008. Thus, this Amendment is timely. If any fees are believed due, the Director is authorized to charge any necessary fees to Deposit Account No. 13-0480, referencing the Attorney Docket specified herein.

Respectfully submitted,

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